The Loading Order – How Are We Doing?

Jackalyne Pfannenstiel
Chairman
California Energy Commission

Independent Energy Producers
Annual Meeting
October 10, 2006

Energy Action Plan's Loading Order Directs Resource Additions

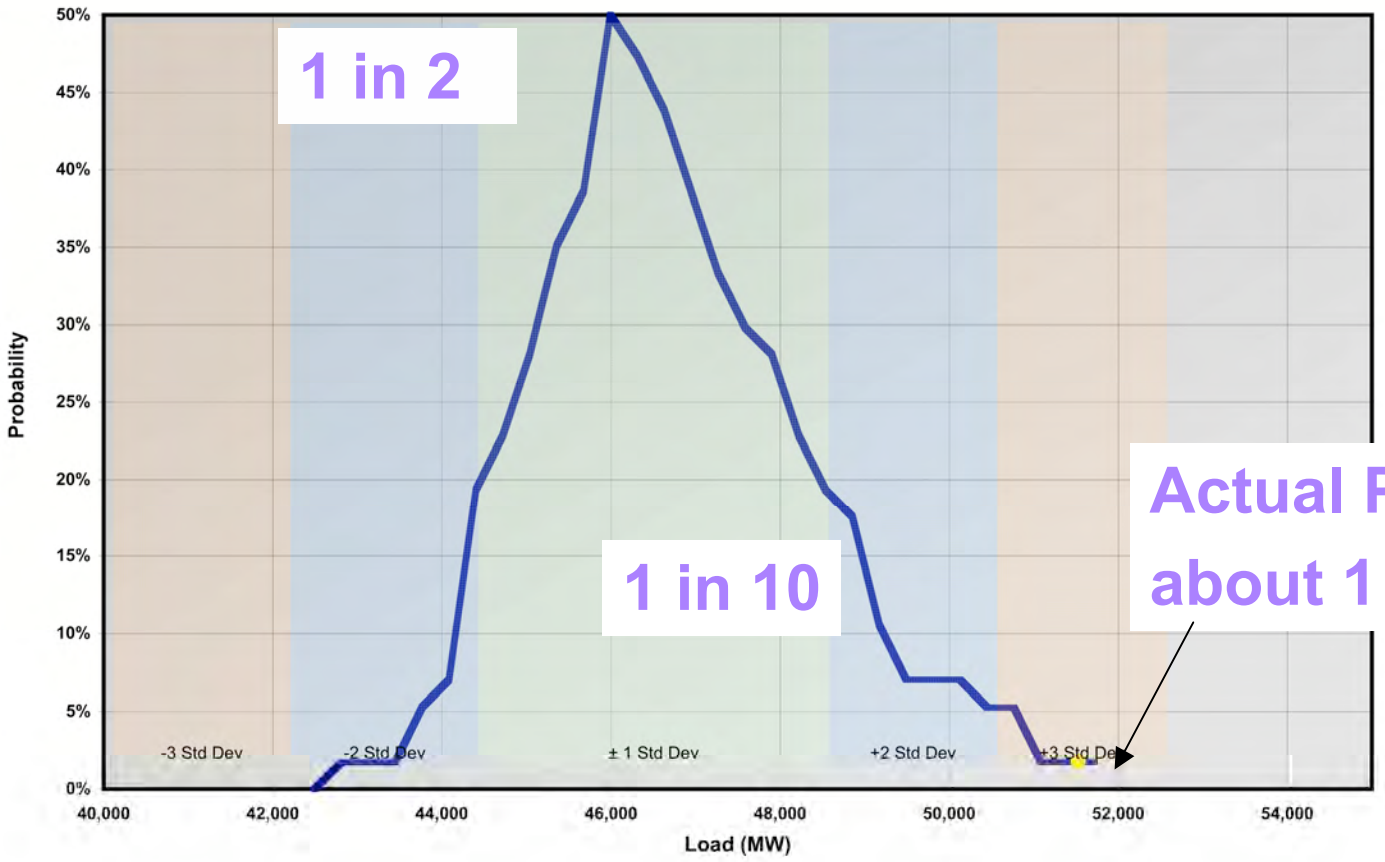
- Energy efficiency and demand response
- Renewable energy resources
- Clean and efficient fossil generation

2006 Heat Storm Was a Wake-Up Call

How hot was it?

- Northern California peak temperatures at once-in-28-year levels.
- Southern California peak temperatures at once-in-10-years, even over the weekend.
- SDG&E load peaked on Saturday - first time ever.
- Record 11 days over 100° in Sacramento.
- Northern California overnight lows were highest in recorded history - at least 1 in 57 years.

An Improbable Peak



Surviving The Heat Storm

What worked:

- Coordination and communication
- Generation, transmission and import availability
- Demand response
- Praying

What didn't:

- Distribution transformers

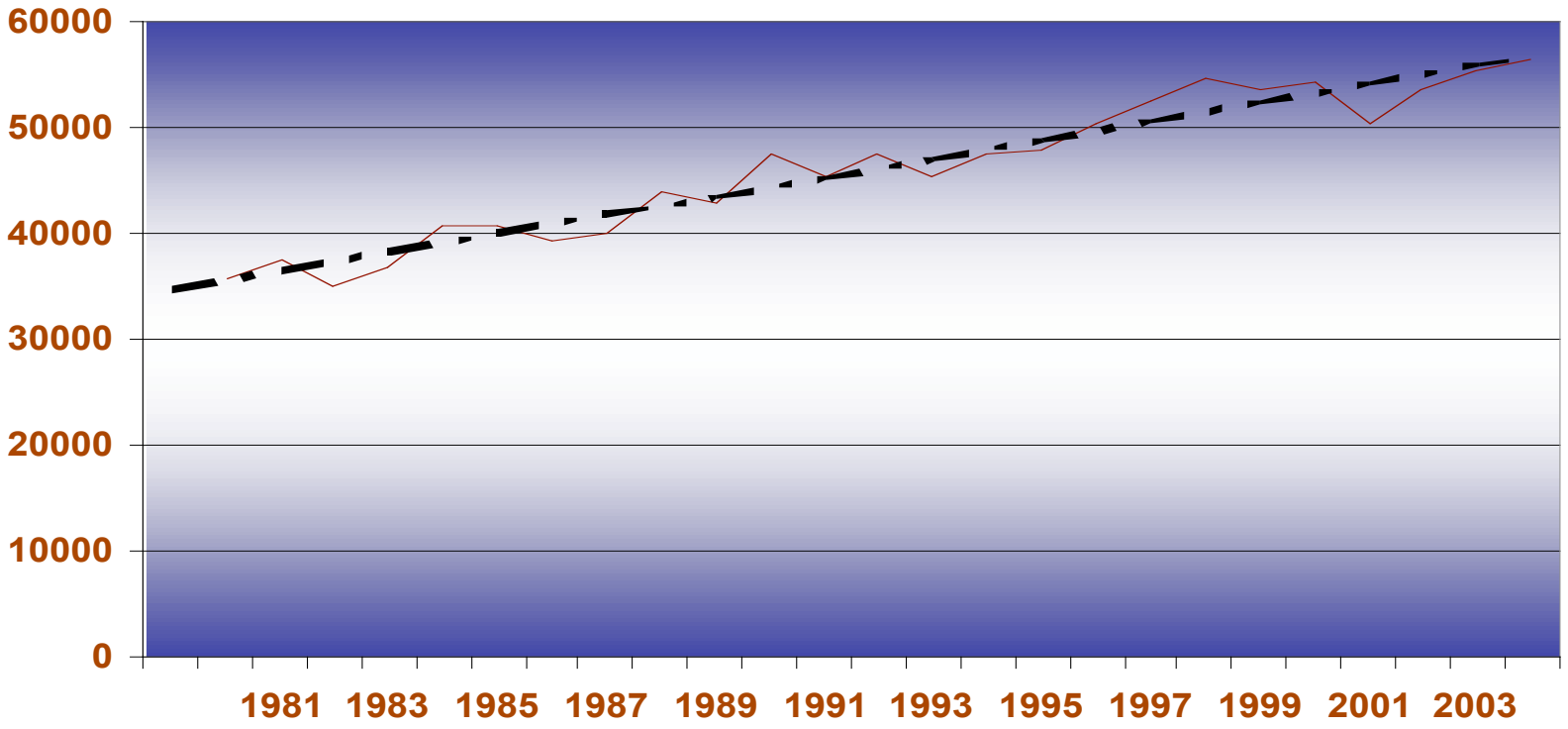
Lessons For Next Time

- Distribution transformers fail under extreme heat conditions.
- Demand response well-suited for low probability events.
- Peak load system operations needs planning and coordination.
- Demand forecast needs to be updated often.
- Luck is not a resource.

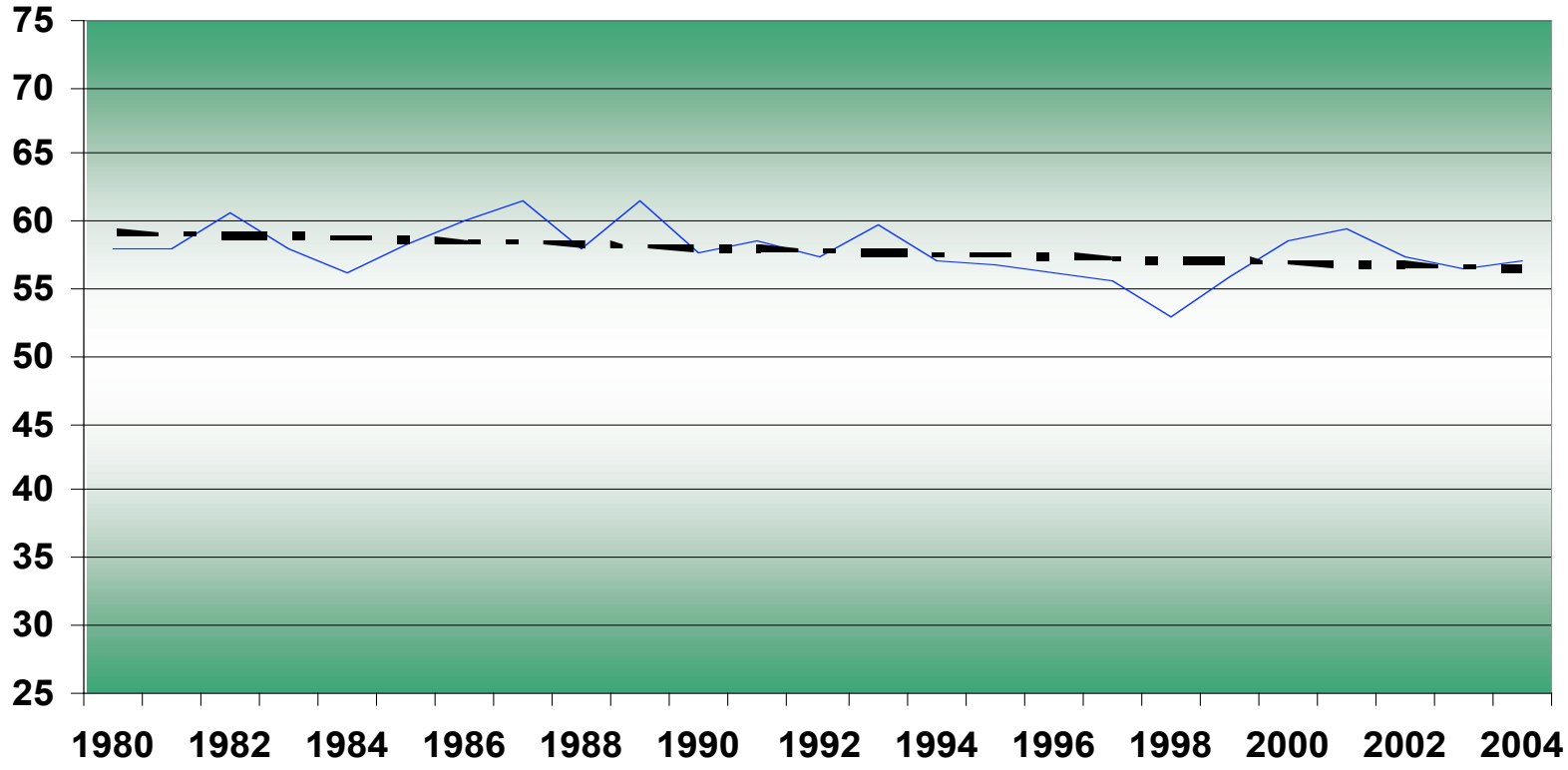
Resource Needs

- Loads growing at 1.5%-2% per year
- Peaks growing faster

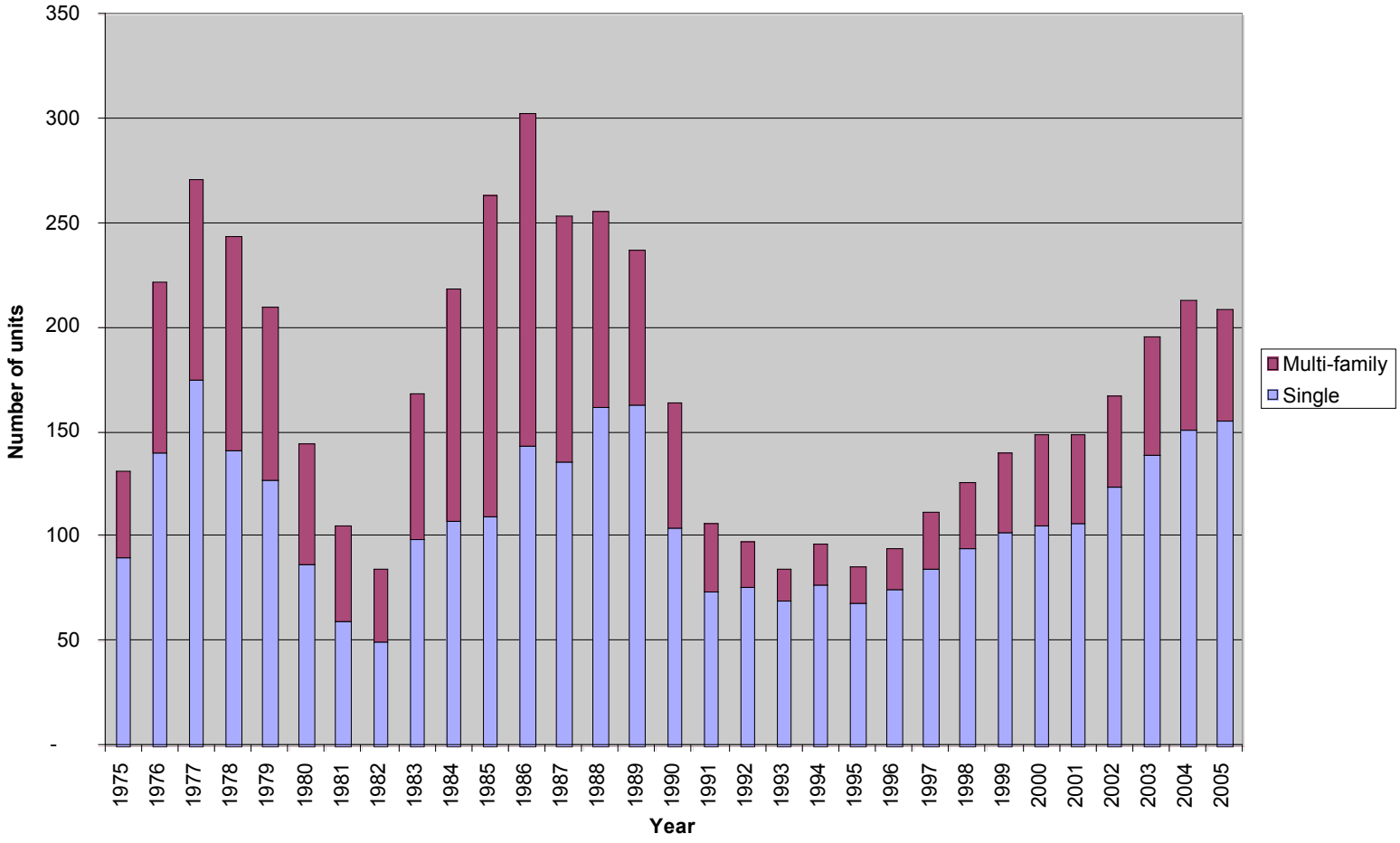
Peak Demand Growth



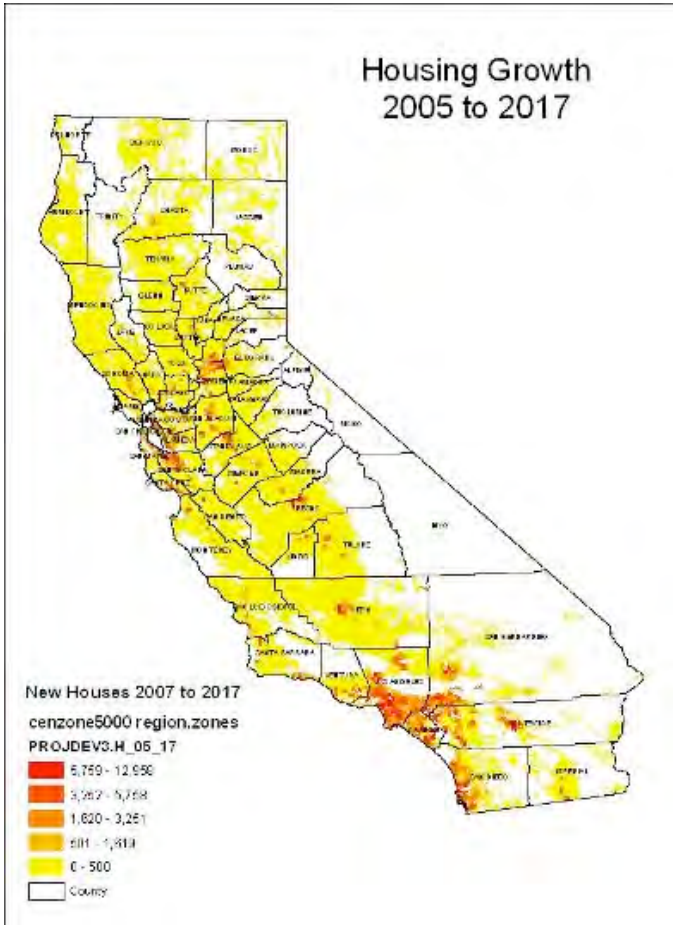
Declining Load Factors



Housing Drives Load Growth



New Homes Add to Peak Demand

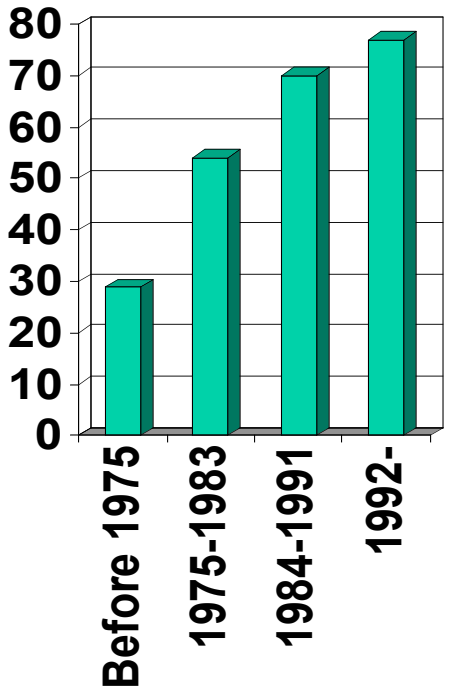


- 1.2 million new homes by 2017
- Most in hottest areas
- AC loads add 2,400 MW at peak

Air Conditioning Contributes to the Peak

- More Central Air Conditioning
- Housing Growth in Hotter Areas
- More AC in Existing Urban Centers
- Revised Peak Forecast for Summer 2006 and Beyond

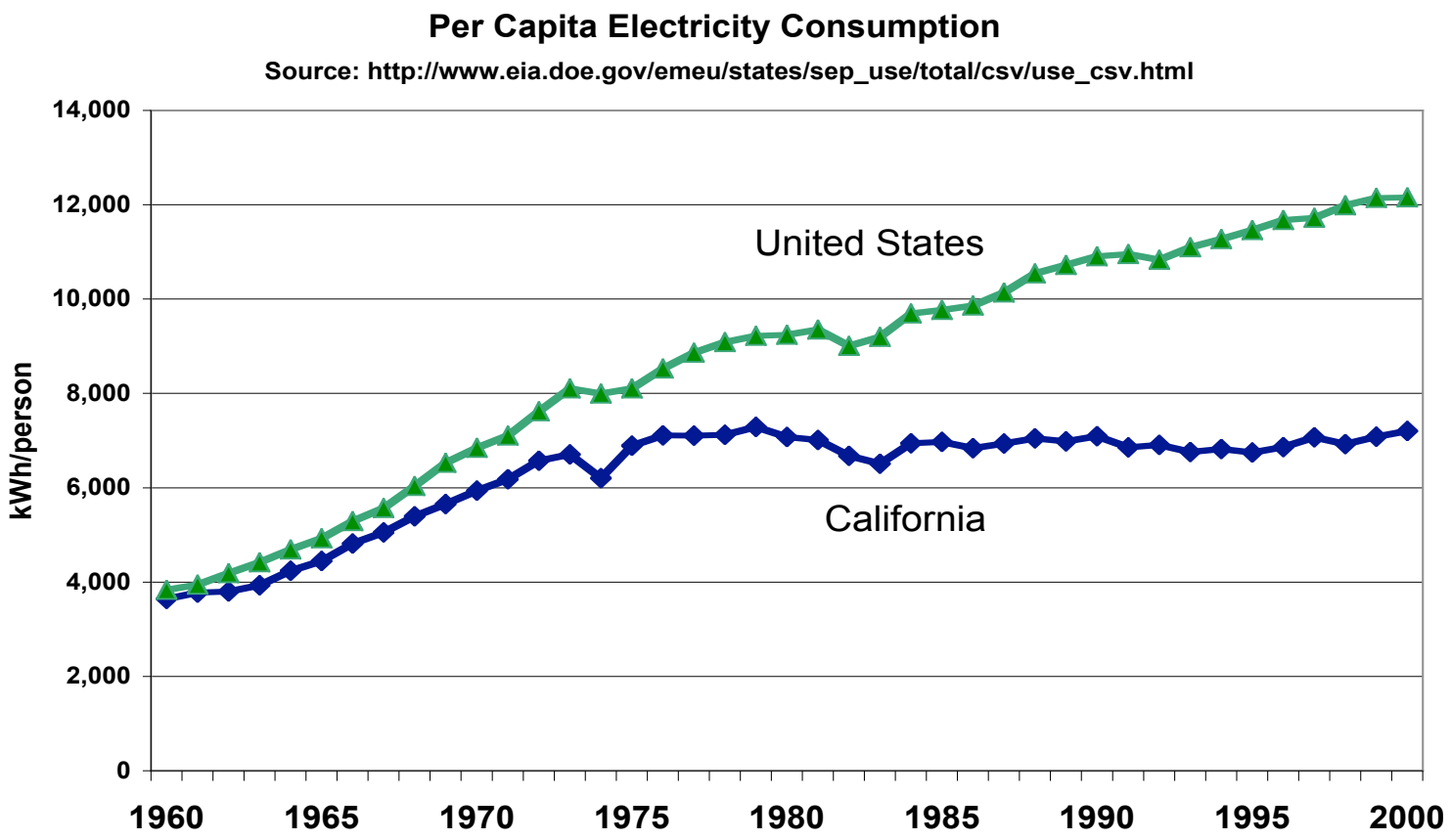
Saturation of Central AC



Loading Order: Energy Efficiency

- First: Use energy efficiency and demand response as preferred means of meeting growing energy needs.

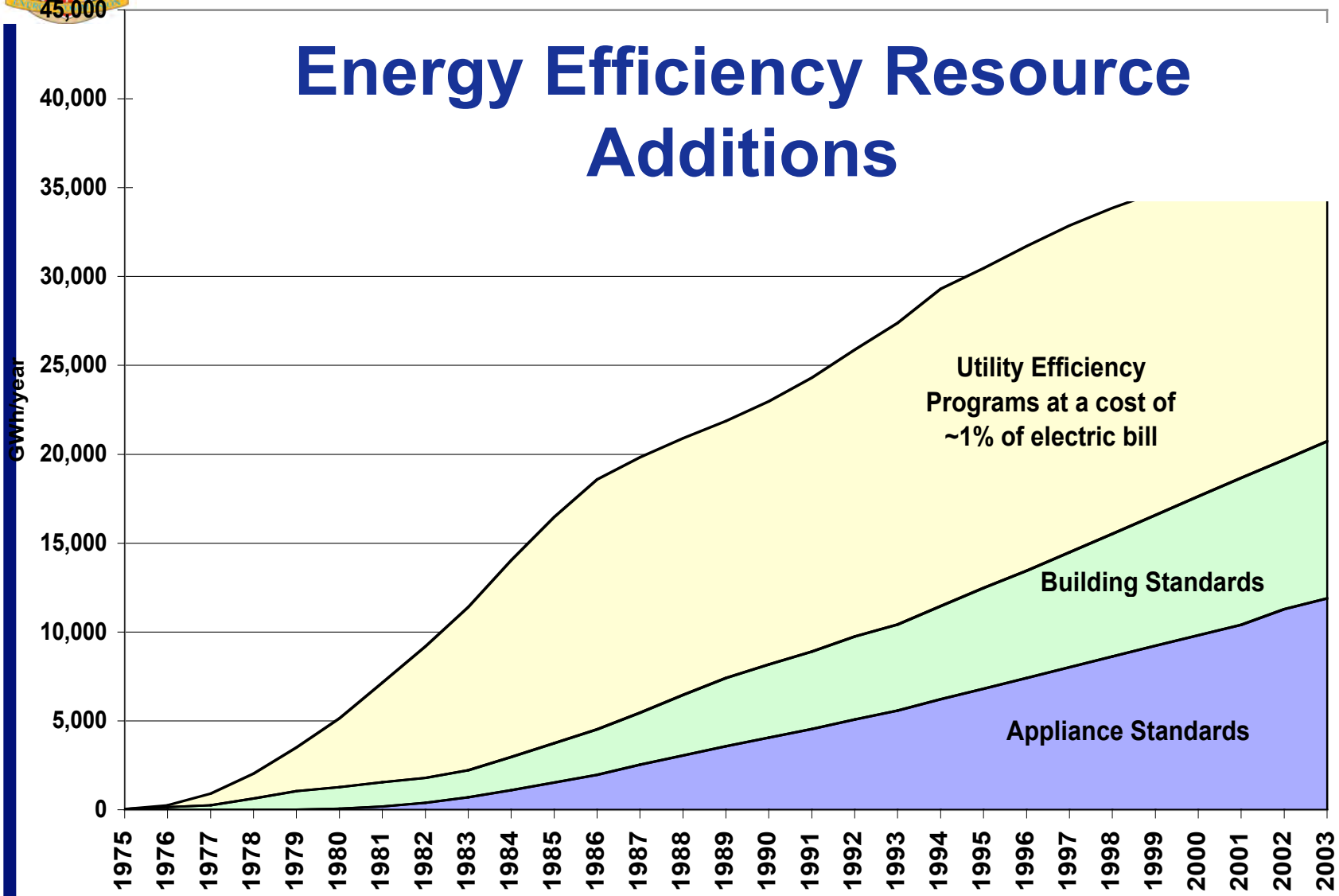
Energy Efficiency Works



Annual Energy Savings from Efficiency Programs and Standards

California Energy Commission

Energy Efficiency Resource Additions



Meeting EE Goals

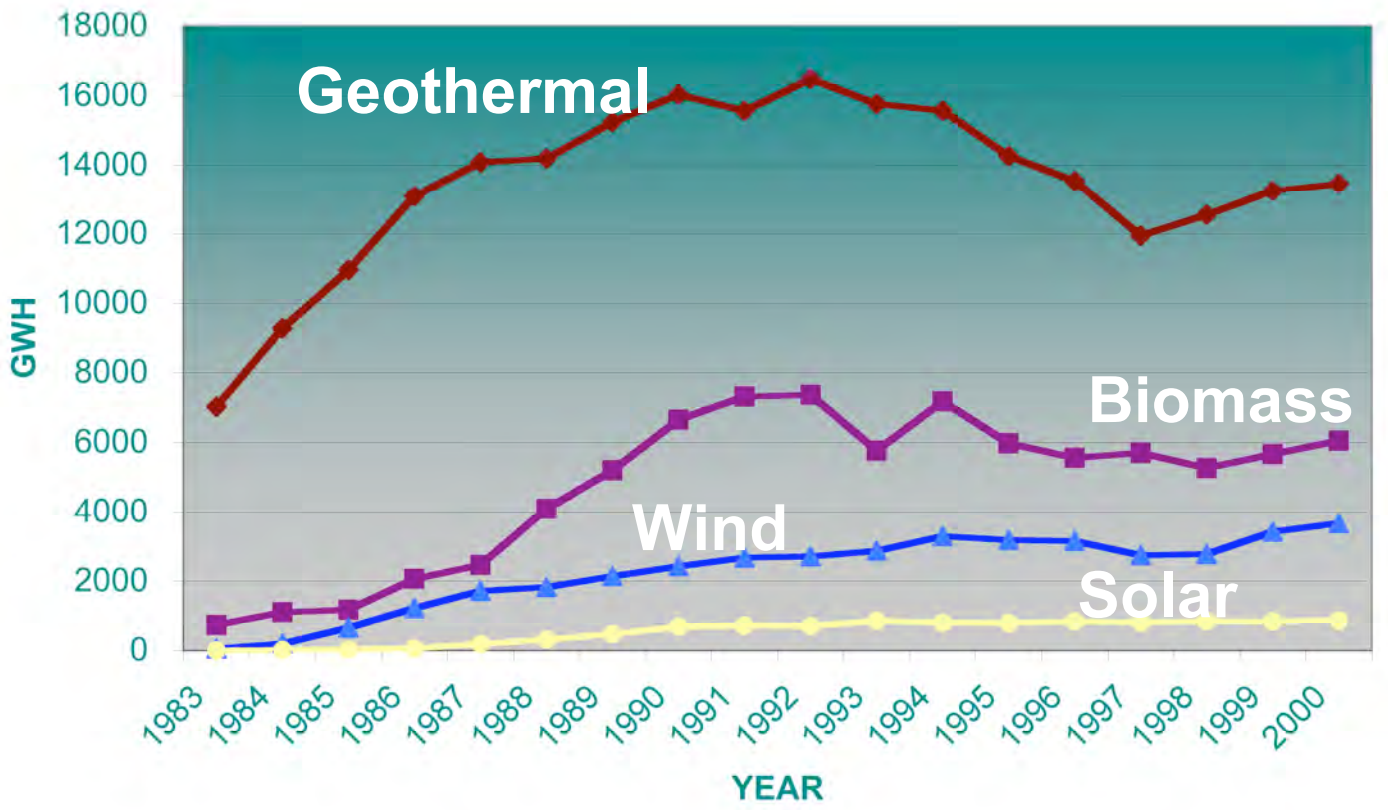
	Annual Goals As of July 2006			Achieved Annual Savings YTD	Achieved Savings As % of 2006 Goal
	2006	2007	2008		
Net Summer Peak MW	442	478	528	84	19%
Net Annual MWh	2 million	2.2 million	2.5 million	382,000	19%
Net Annual Therms	30 million	37.3 million	44.4 million	4.3 million	14%

Loading Order: Renewables and Disributed Generation

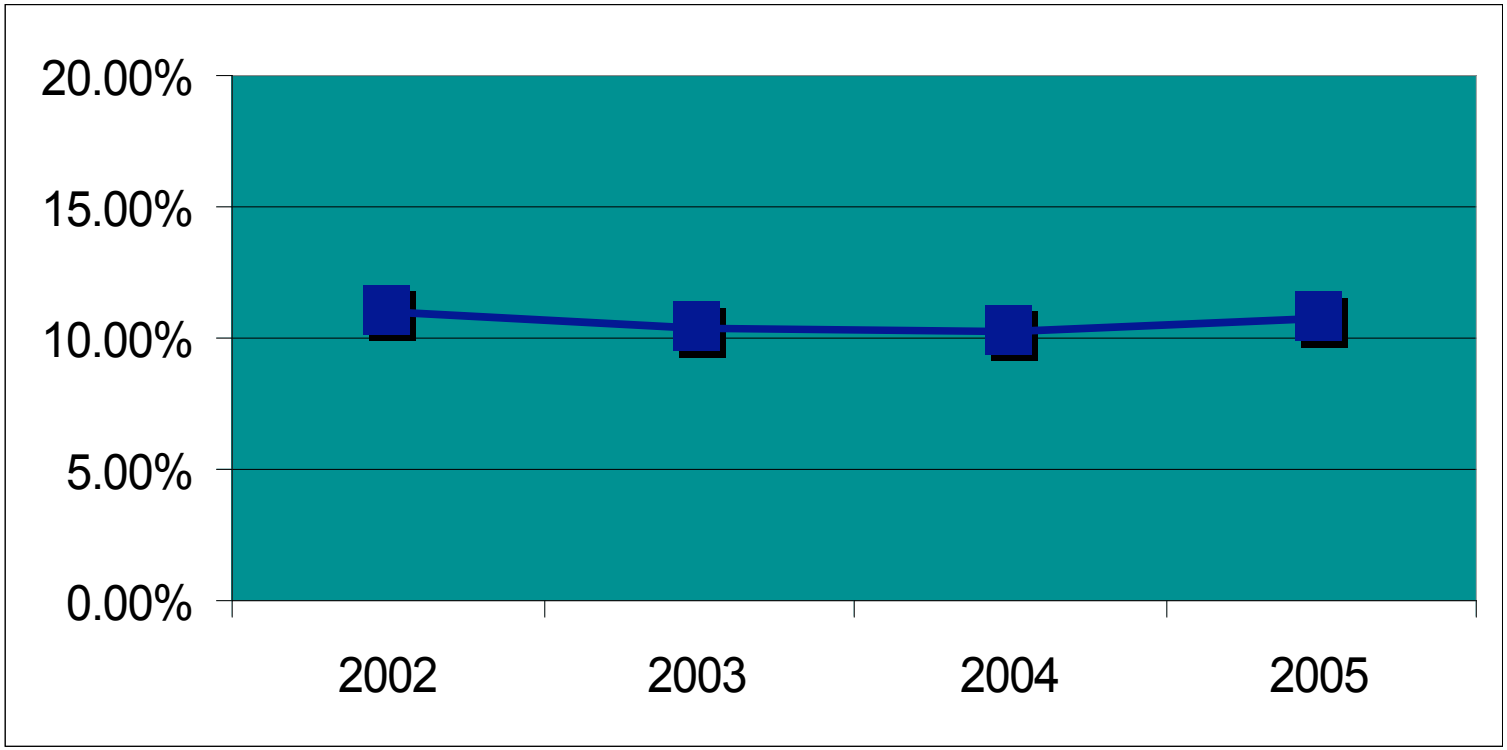
- Second: New generation needs met first by renewable energy resources and distributed generation, such as combined heat and power

.

Renewable Energy Growth



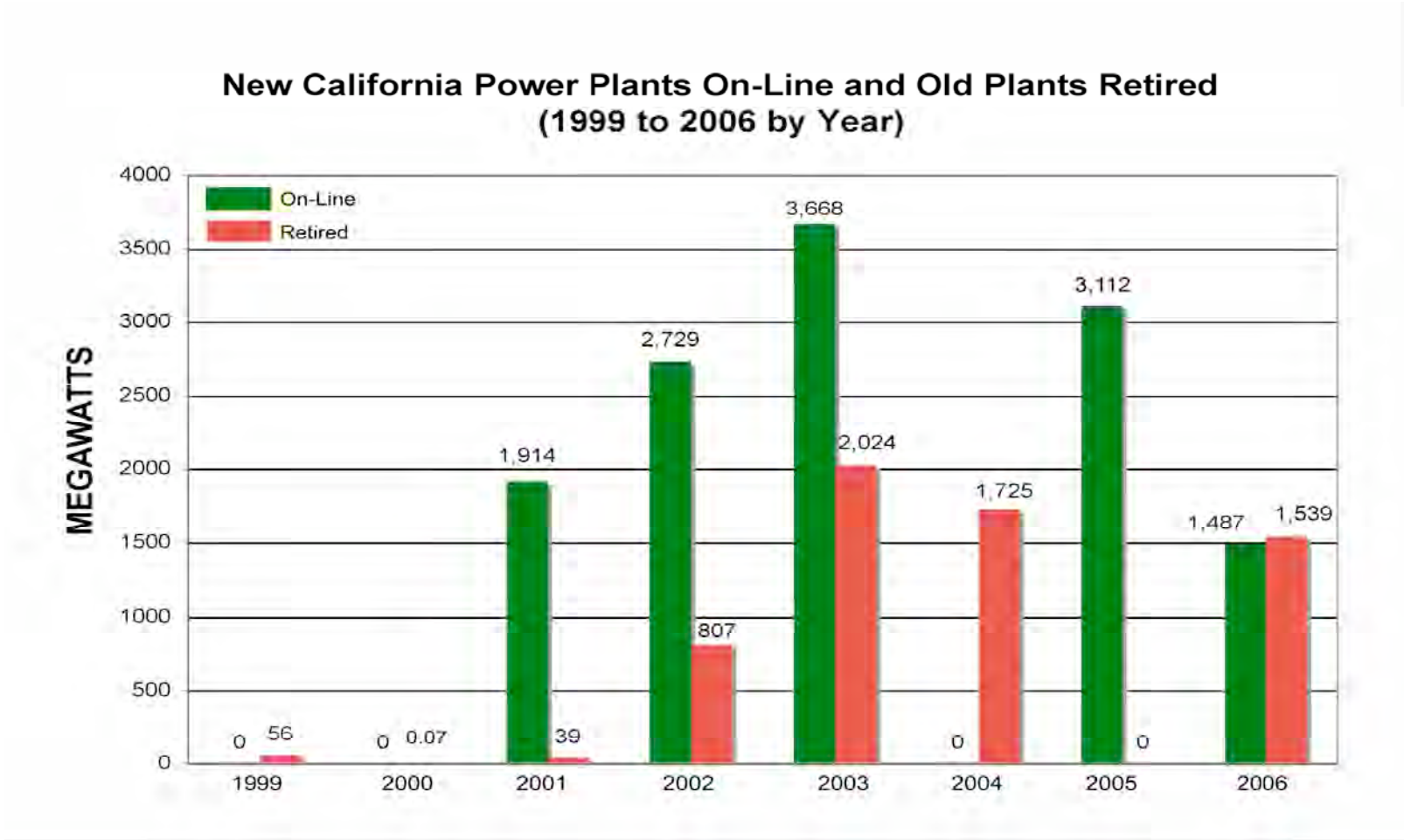
Renewables: Stuck in Neutral?



Loading Order: Clean and Efficient Fossil-fuel Generation

- Third: To the extent the above are unable to satisfy energy and capacity needs, support clean and efficient fossil-fuel fired generation.

We've Been Adding Power Plants



More Applications Are Being Considered

Projects	*No.*	*MW*
In Active Review	14	4,506 MW
Possible New Filings through June 30, 2007	~12	~5,000 MW
Plants on Line for Summer 2007	1	160 MW
Plants on Line for Summer 2008	2	893 MW
Plants on Line for Summer 2009	~4	1,350 MW

9,036 MW Licensed, But Not Built

	Number	MW
Cancelled/expired	6	1,393
No contract	6	5,057
Other reasons	5	2,586

Overall, How Are We Doing With the Loading Order?

Resource	Goal	Progress
Efficiency	*2 Million MWH*	*19%*
Demand Response	*2,400 MW*	*1,100 MW*
RPS	*20% by 2010*	*11%*
Fossil	*As Needed*	*2,400 MW for next 3 years*

Prospects for Improvement

- Energy legislation
- Transmission progress
- Utility solicitations: renewable, non-renewable
- Advanced metering
- Integrated Energy Policy Report
  - RPS improvement
  - Load Management Standards authority

2006 Energy Legislation

AB 32	***Greenhouse Gases*** **– GHG emission reductions**
AB 2021	***Energy Efficiency*** **– Statewide EE target**
SB 1	***Solar Energy*** **– 3,000 MW goal**
SB 107	***Renewable Energy*** **– Acceleration of RPS**
SB 1059	***Transmission*** **-- Designation of corridors for future use**
SB 1368	***Greenhouse Gas Emissions*** **– Emissions performance standards for utilities**

Transmission Progress

- **Devers-Palo Verde No. 2**
  - Expected Operating Date: December 2009
- **Tehachapi**
  - Agreed on Plan of Service
  - Permitting of First Phase in Process
  - Phase 2 and 3 CPCN applications 2007
- **Sunrise**
  - Application Accepted as Adequate Sept. 2006
  - Will allow 700 MW of renewable generation
- **Trans-Bay Cable**
  - Approvals and Construction Started in 2007

Progress in Procurement

- The CPUC process is underway
- Solicitations are resulting in signed contracts - renewables and non-renewables
- Stakeholder groups are expressing optimism

Progress With Renewables

- CPUC has approved nearly 3,000 MW of contracts
- WREGIS is expected to be deployed in 2007
- The California Solar Initiative, beginning in 2007, has a goal of 3,000 MW of PV in ten years

Advanced Metering Update

- **PG&E**
  - Network deployment begun in September
  - Meter deployment to begin in November in the Bakersfield area.
- **SDG&E**
  - CPUC decision scheduled for the first quarter of 2007.
  - AMI deployment is expected to be completed mid-2008-2010.
- **SCE**
  - Pre-deployment efforts positive: expects compatible system available soon.
  - AMI project application and business case filing expected in July 2007.

Loading Order Still Works

- The Energy Action Plan was a valuable call to action; there's been too little action since
- We need more energy efficiency, more demand response, more renewables, more fossil generation
- We're not out of the woods yet on summer reliability
- We need to find new approaches
- We all need to take responsibility